

Recent Activities in the United States involving the **National Commission on Forensic Science** and the **Organization of Scientific Area Committees**

John M. Butler, Ph.D.

U.S. National Institute of Standards and Technology



Together InForming Justice

ANZFSS 23rd International Symposium
on the Forensic Sciences
18 - 23 September 2016
Auckland, New Zealand

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

FOR **NSIC**
SCI **ENCES**



Auckland, New Zealand – 22 September 2016

My last ANZFSS meeting
was in Freemantle in 2006

Acknowledgments and Disclaimers

I am grateful to work with many excellent colleagues at NIST and DOJ including Susan Ballou, Richard Cavanagh, Lindsay DePalma, John Paul Jones II, Jonathan McGrath, Sharon Nakich, Rich Press, Karen Reczek, Nelson Santos, Mark Stolorow, and Victor Weedn.

Thanks to those who provided input on the Urban Legend ideas:
Reva Schwartz, Elham Tabassi, Robert Thompson, Susan Ballou, Melissa Taylor

Wilmer Souder research: Kristen Frederick-Frost and Robert Thompson

Points of view are mine and do not necessarily represent the official position or policies of the U.S. Department of Justice or the National Institute of Standards and Technology.

Certain commercial equipment, instruments and materials are identified in order to specify experimental procedures as completely as possible. In no case does such identification imply a recommendation or endorsement by the National Institute of Standards and Technology nor does it imply that any of the materials, instruments or equipment identified are necessarily the best available for the purpose.

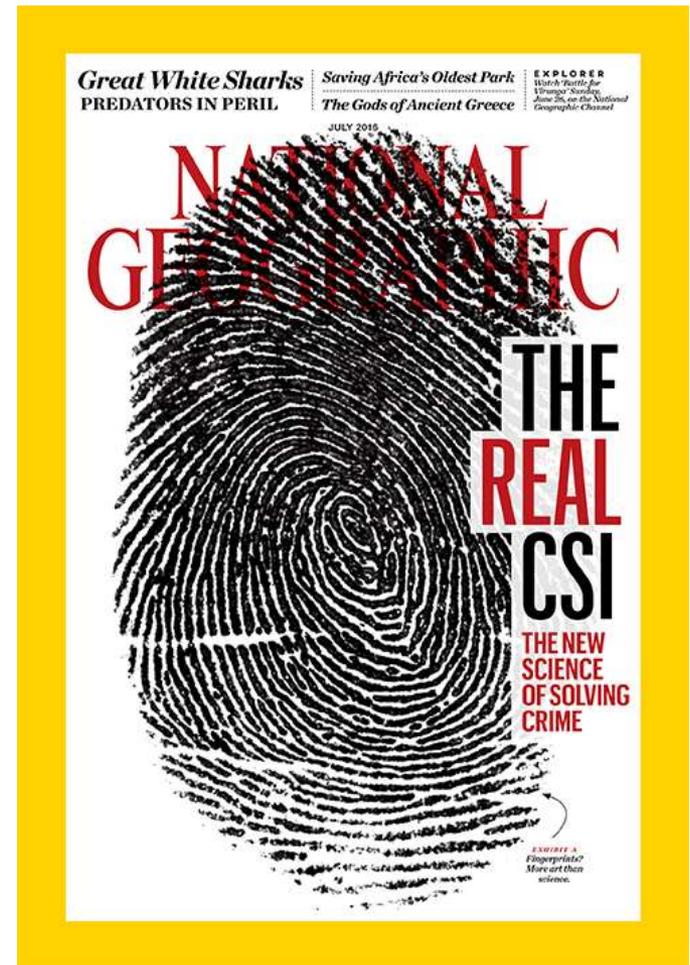
Cover Stories on Forensic Science

Science



11 March 2016
Vol. 351, Issue 6278

National Geographic



July 2016



President's Council of Advisors on Science and Technology (PCAST) Executive Office of the President

<https://www.whitehouse.gov/administration/eop/ostp/pcast>

July 13, 2016 Public Meeting

*A report on Forensic
Science was approved
September 1, 2016*



Released September 20, 2016

REPORT TO THE PRESIDENT
Forensic Science in Criminal Courts:
Ensuring Scientific Validity
of Feature-Comparison Methods

Executive Office of the President
President's Council of Advisors on
Science and Technology

September 2016



Urban Legend

- a modern story of obscure origin and with little or no supporting evidence that spreads spontaneously in varying forms and often has elements of humor, moralizing, or horror ([dictionary.com](https://www.dictionary.com))

Top Ten... Urban Legends of Forensic Science

- 10.** I do my work the same every time – why do I need to write down my method and results?
- 9.** More money will solve all of our problems
- 8.** I am not “biased” (and what does “bias” mean anyway?)

Top Ten... Urban Legends of Forensic Science

7. Courtroom decisions validate science (i.e., my method is correct because the jury found the defendant guilty)
6. I can only rely on people that agree with me and who work in my specific discipline (i.e., no one else can understand my problems)
5. It is not my fault if the people in the courtroom don't understand my testimony

Top Ten... Urban Legends of Forensic Science

4. Defense lawyers are evil and should not have access to my data

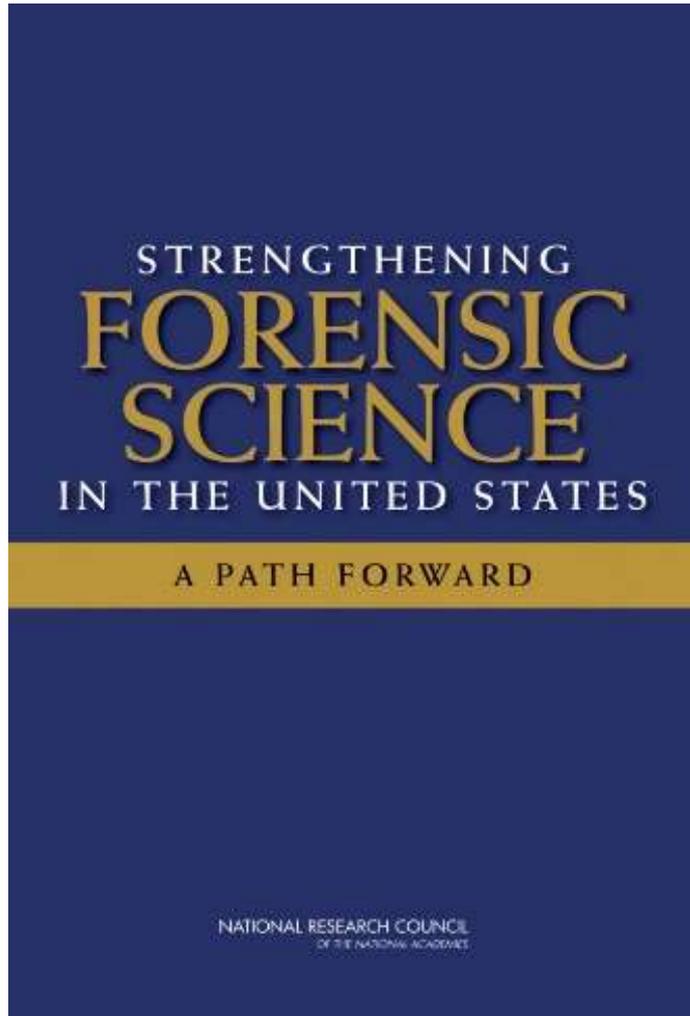
3. I have never made a mistake – therefore MY error rate is zero!

2. DNA is problem-free – so says the NRC!
(NAS 2009 report, p. 7)

Top Ten... Urban Legends of Forensic Science

1. Let's give this problem to the statisticians – **they will all agree** on an appropriate solution!

“The National Academy of Sciences” (NAS) Report on Forensic Science



In the preface (p. xx), Harry T. Edwards and Constantine Gatsonis, the committee co-chairs, write:

“The forensic science system, encompassing both research and practice, has serious **problems that can only be addressed by a national commitment to overhaul the current structure** that supports the forensic science community in this country. This **can only be done with effective leadership** at the highest levels of both federal and state governments, pursuant to national standards, **and with a significant infusion of federal funds.**”

Released February 2009

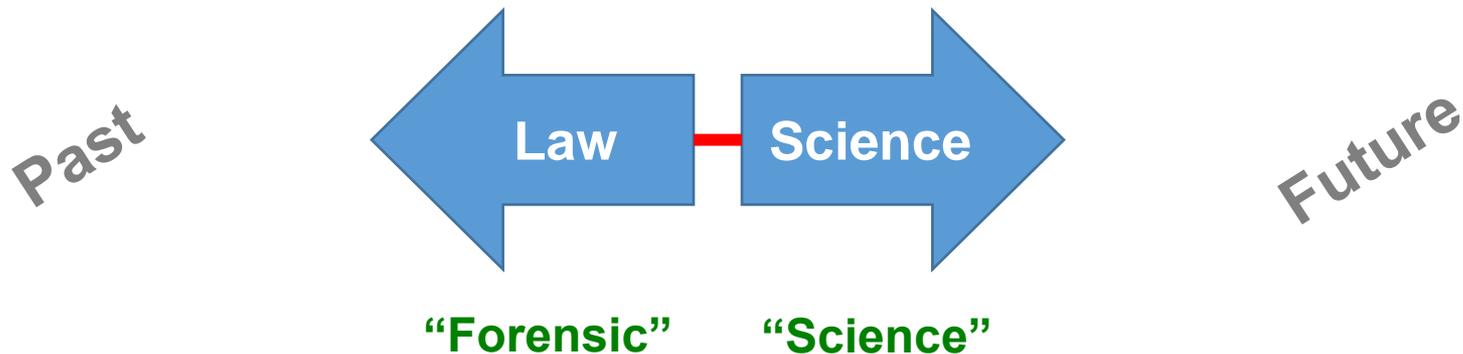
Some Important Observations

- The National Research Council 2009 (“**NAS Report**”) **called for changes** to strengthen forensic science (with 13 recommendations) but these are not really new issues
- **The criminal justice system**, where forensic science only plays a small part, **is not perfect**; there have been individuals wrongly convicted for a variety of reasons
- Despite a few well-publicized examples (e.g., Annie Dookhan), **forensic scientists** generally want to do a good job and **are trying to do their best**
- **Many forces are at play** to either change things or to maintain the status quo → **which changes are needed?**

Culture Clash: Science and Law

Tension exists between science and the law:

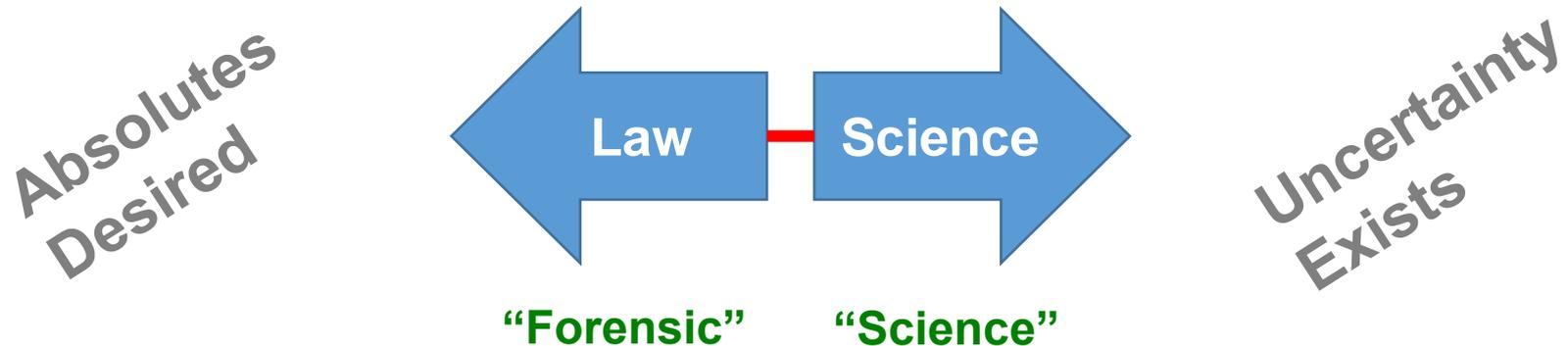
- The legal community **looks to the past** (precedence is desired)
- The scientific community **looks to the future** (evolving improvement is desired)



Culture Clash: Science and Law

Tension exists between science and the law:

- The legal community **wants finality and absolutes** (guilty or not-guilty court decisions)
- The scientific community **operates without certainty** (rarely with probabilities of 0 or 1)





Greg Matheson on Forensic Science Philosophy

The CAC News – 2nd Quarter 2012 – p. 6

“Generalist vs. Specialist: a Philosophical Approach”

<http://www.cacnews.org/news/2ndq12.pdf>

“If you want to be a technician, performing tests on requests, then just focus on the policies and procedures of your laboratory. If you want to be a scientist and a professional, learn the policies and procedures, but go much further and learn the philosophy of your profession. **Understand the importance of why things are done** the way they are done, the scientific method, the viewpoint of the critiques, the issues of bias and the importance of ethics.”

Background Information on NIST

- Started in 1901 with roots back to the U.S. Constitution
- Name changed to **National Institute of Standards and Technology (NIST)** from National Bureau of Standards in 1988
- Primary campus in Gaithersburg, Maryland (just outside of Washington, D.C.)
- Part of the U.S. Department of Commerce
- >3,400 employees and >3,700 associates
- Supply >1300 reference materials
- Defines official time for the U.S.



Types of Standards

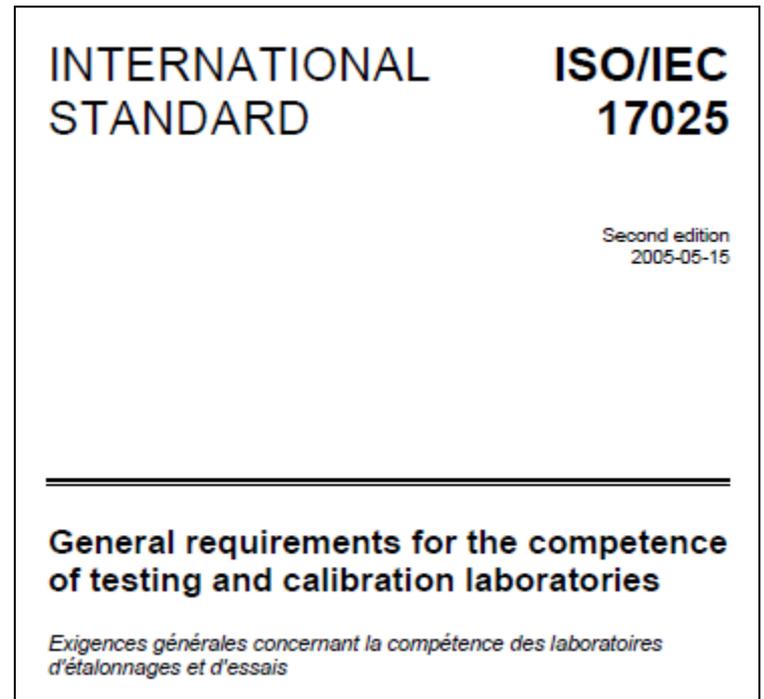
physical (measurement) standards



Certified reference material to aid with calibration of measurements

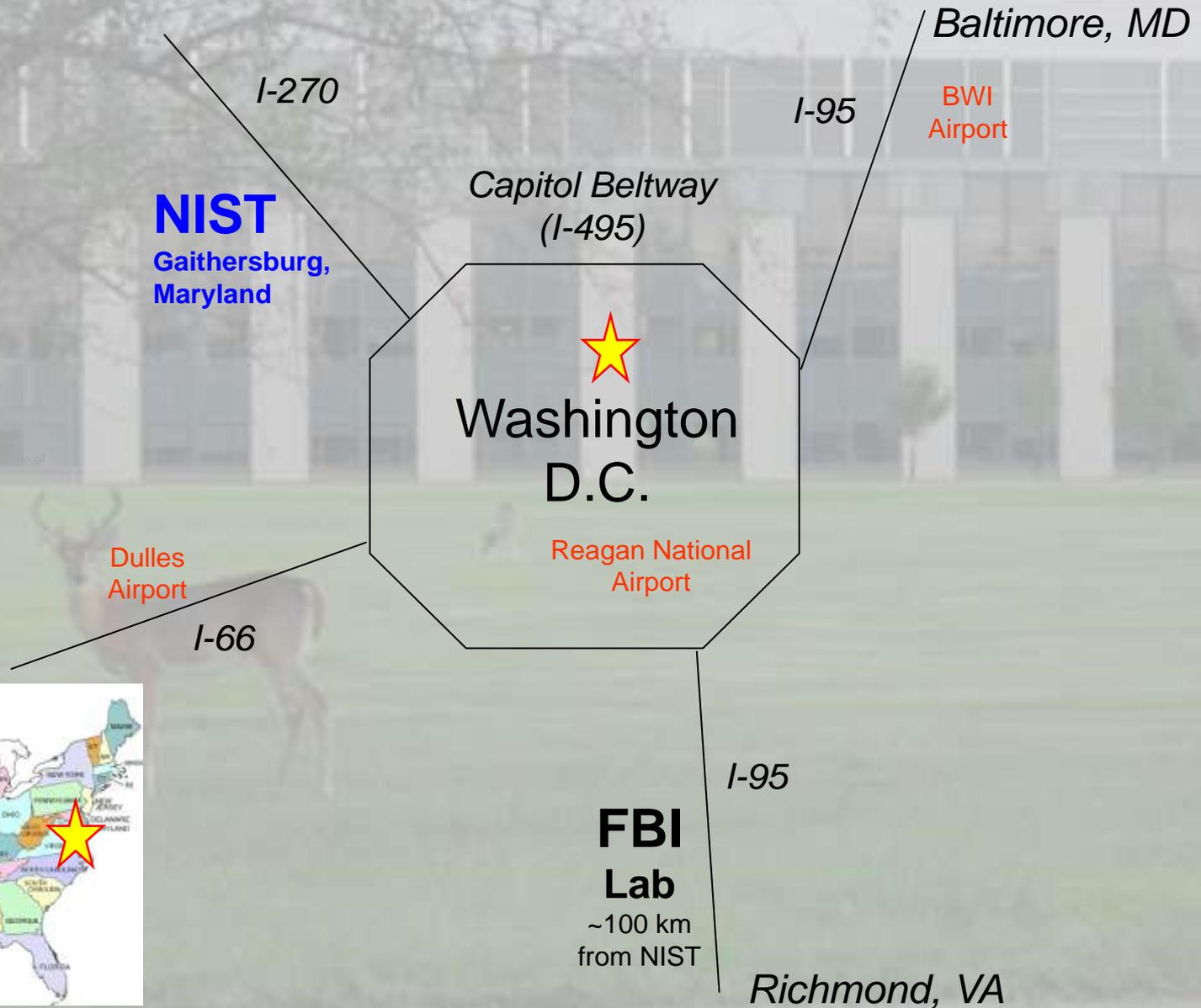
<http://www.nist.gov/srm/>

documentary (technical) standards



Specific requirements for the operation of a laboratory related to management system and competence

Location of NIST Gaithersburg Campus



NIST At-a-Glance

Major Assets, Partnerships, People, Budget



**2 Large
Research
Campuses**



Gaithersburg, MD— **62** bldgs., **578** acres
Boulder, CO—**26** bldgs., **208** acres



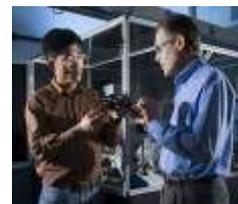
**Partnerships
In Every
State**



60 Manufacturing Extension Centers
10 Joint Institutes/Centers of Excellence



**FY 2016
Appropriations
\$964 Million**



**People:
Employees
& Associates**

NIST labs, **\$690 M**
Industrial Technology Services, **\$155 M**
Construction of Research Facilities, **\$119 M**

Additional Resources

~ **\$120 M** from other government agencies
~ **\$50 M** from reimbursable services

~**3,400** Federal Employees

~**3,700** Guest Researchers & other
NIST Associates

~ 900 foreign Guest Scientists

~**400** NIST Staff on ~ **1,000** standards
committees

U.S. Innovation Agenda – NIST has an increasing role



Examples of NIST Programs Addressing National Priorities:

- Advanced Communications
- Advanced Manufacturing
- Advanced Materials
- Bioscience & Health
- Climate Assessment
- Cyber-Physical Systems
- Cybersecurity
- Disaster Resilience
- **Forensic Science**
- Quantum Science

National Bureau of Standards

1901

Supporting the Industrial Revolution



Interoperability of fire hose screw threads



Light bulb standards



Standards for irons and steels

Why is NIST involved in forensic science?

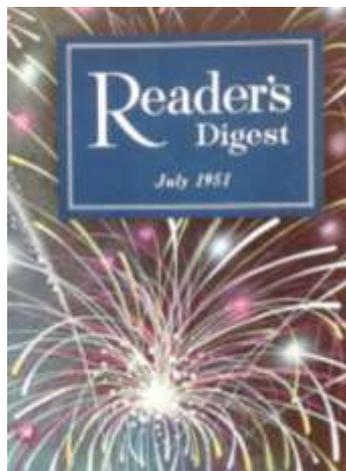
- **Our assistance and technical expertise was requested by DOJ and others**
 - **Establishment of FBI Laboratory** (early 1930s)
 - Automated fingerprint detection (1960s to present)
 - Law Enforcement Standards Laboratory (established in 1971)
 - “Starch Wars” (1977 to 1978)
 - Input on TWGDAM/SWGDAM (1988 to present)
 - DNA reference materials (early 1990s to present)
 - FBI’s DNA Advisory Board (1995 to 2000)
 - Digital forensics (late 1990s to present)
 - National Institute of Justice (NIJ) funding (1970s to present)
 - White House Subcommittee on Forensic Science (2009-2012)
 - **MOU leading to NCFS and OSAC (2013-present)**

FBI Laboratory Began Operations

November 24, 1932 with Assistance of Dr. Wilmer Souder

Page 47: **The development of the [FBI] Laboratory has been carefully planned by the Division with the assistance and advice of Dr. Wilmer Souder**, a well-known and recognized authority in the field of scientific endeavor. Dr. Souder, who is at present acting in an advisory capacity in the further development of the Laboratory, has been engaged as a scientist by the Bureau of Standards for a period of eighteen years and has devoted the principle portion of his time to handwriting, typewriting and ballistics identification. **His advice and experience have rendered invaluable service to the Division in the training of the Laboratory personnel and in obtaining equipment which is considered the most desirable and essential for the performance of its work.**”

From “A Digest of the Early History of the FBI Laboratory” (prepared by Fred M. Miller January 1956 for use by Don Whitehead in writing Chapter 16 of his 1956 book *The FBI Story*); a copy provided to NIST by FBI Historian John Fox on July 9, 2015



Reader's Digest July 1951 article

pp. 118-120

When no one else can solve a mystery, Government heads put in a call for Dr. Souder



Washington's Detective X

Condensed from This Week Magazine

Emile C. Schurmacher

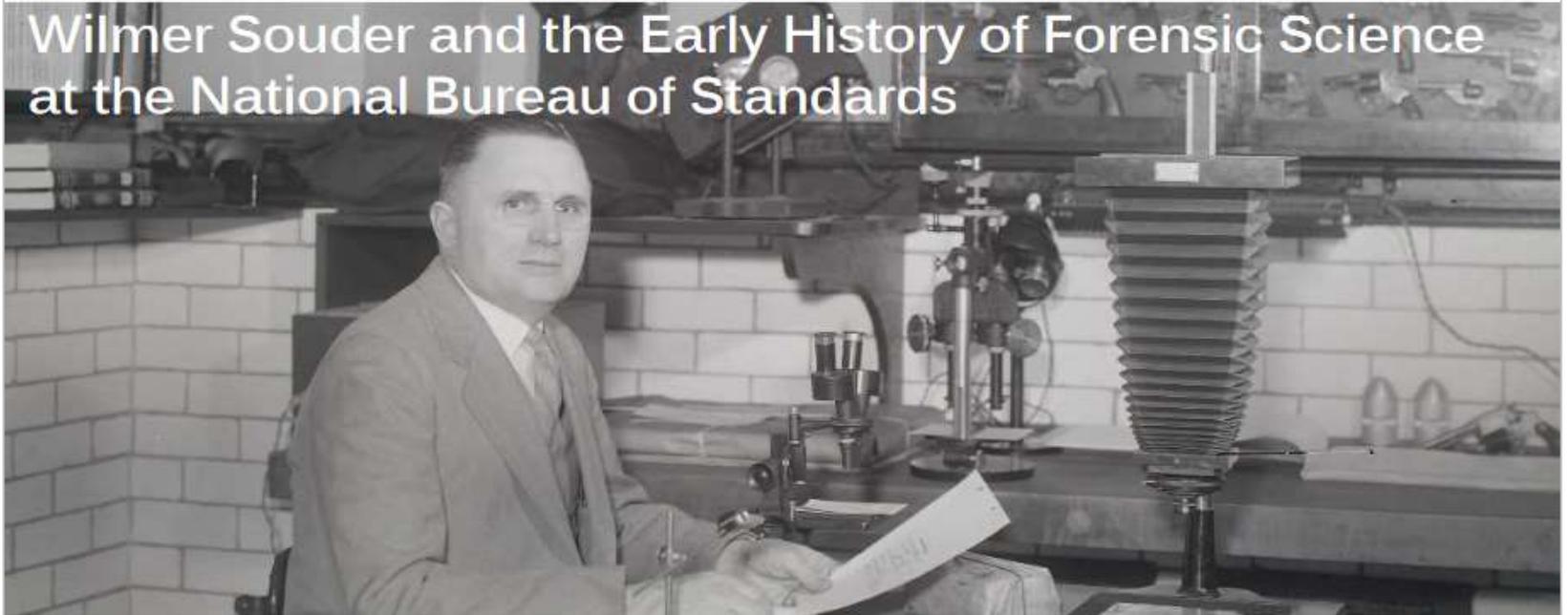
Dr. Wilmer Souder and the National Bureau of Standards Identification Laboratory (1935)

Photo taken April 11, 1935
(rediscovered August 5, 2015 within
National Archives NBS collections)



The Best Forensic Scientist You've Never Heard Of

Wilmer Souder and the Early History of Forensic Science
at the National Bureau of Standards



Kristen M. Frederick-Frost, PhD

Robert M. Thompson, BS

John M. Butler, PhD

LW1: Last Word Society

American Academy of Forensic Sciences

Las Vegas, NV (February 25, 2016)



Slides available on the NIST STRBase website:

http://www.cstl.nist.gov/strbase/pub_pres/Souder-AAFS2016-LWS-FINAL.pdf

June 10, 2016

a NIST colloquium presentation was given on Souder and a NIST museum exhibit opened by his granddaughter



NIST Forensic Science Efforts

Partnership with Department of Justice

National Commission on Forensic Science (NCFS)



*Department of Justice FACA
co-led by NIST
setting policy*

Organization of Scientific Area Committees (OSAC)



*NIST-administered
>540 members of the community
establishing standards and best practices*

NIST Funded Internal Research Programs



*~\$7.5M/year
invested*

NIST Forensic Science Center of Excellence

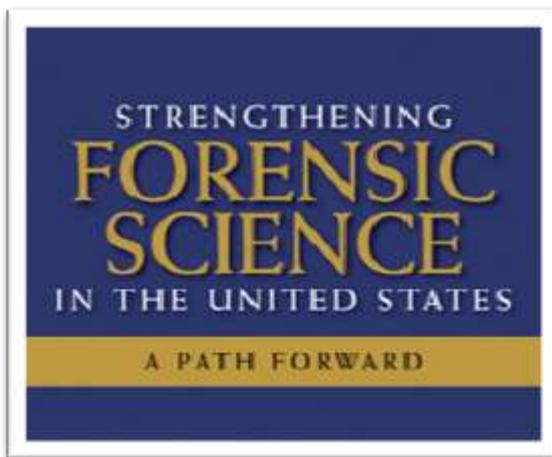


*CoE: ~\$4M/year invested for
5 years (2015-2020)*

International Symposium on Forensic Science Error Management



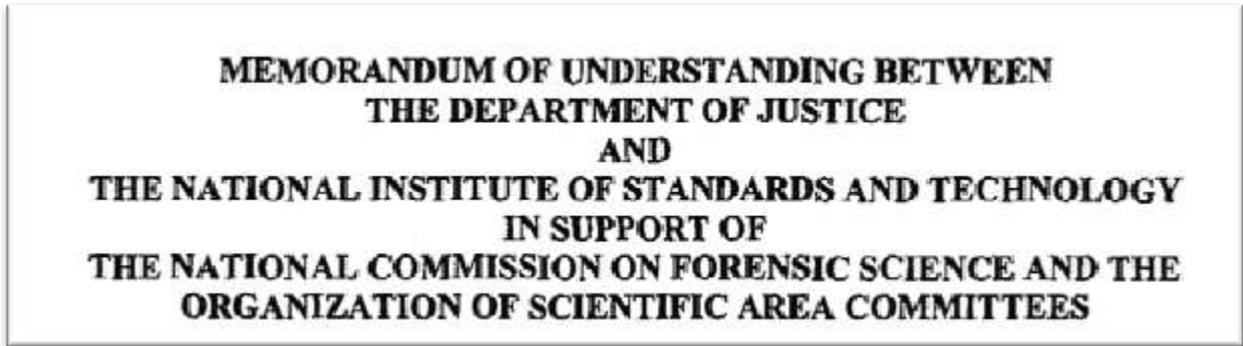
432 participants (11 countries)



2009 ...A National Research Council publication suggests the creation of a new government entity, the ***National Institute of Forensic Science***, to establish and enforce standards within the forensic science community.



2009 to 2012 - National Science and Technology Council
NIST co-chairs *Subcommittee on Forensic Science*

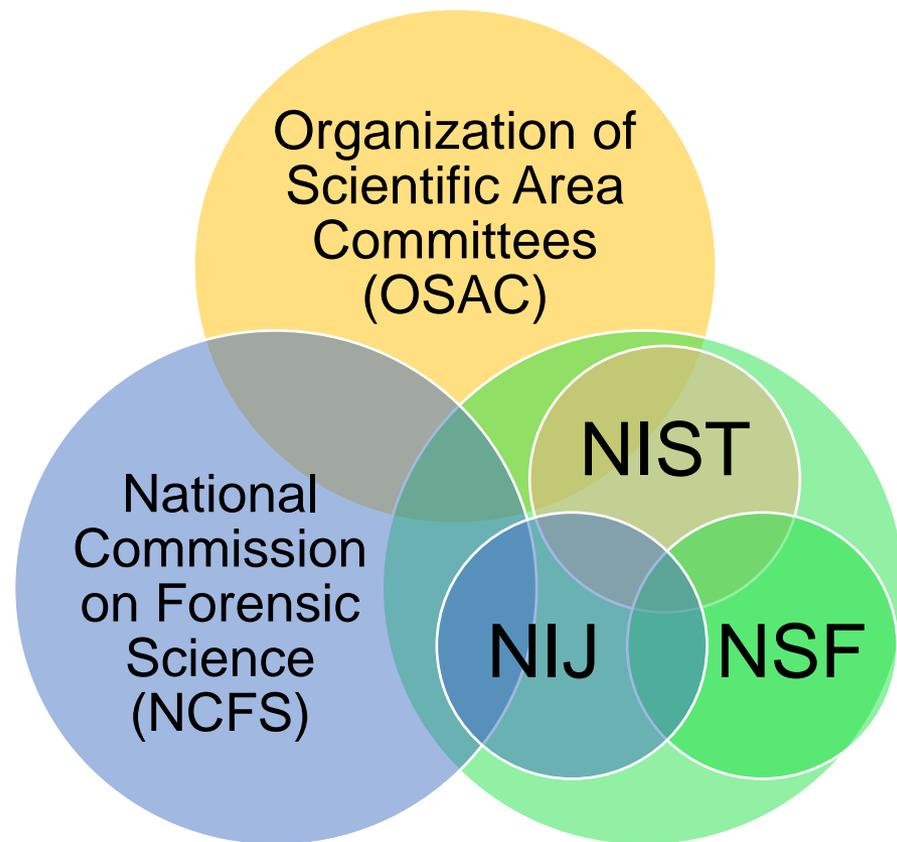
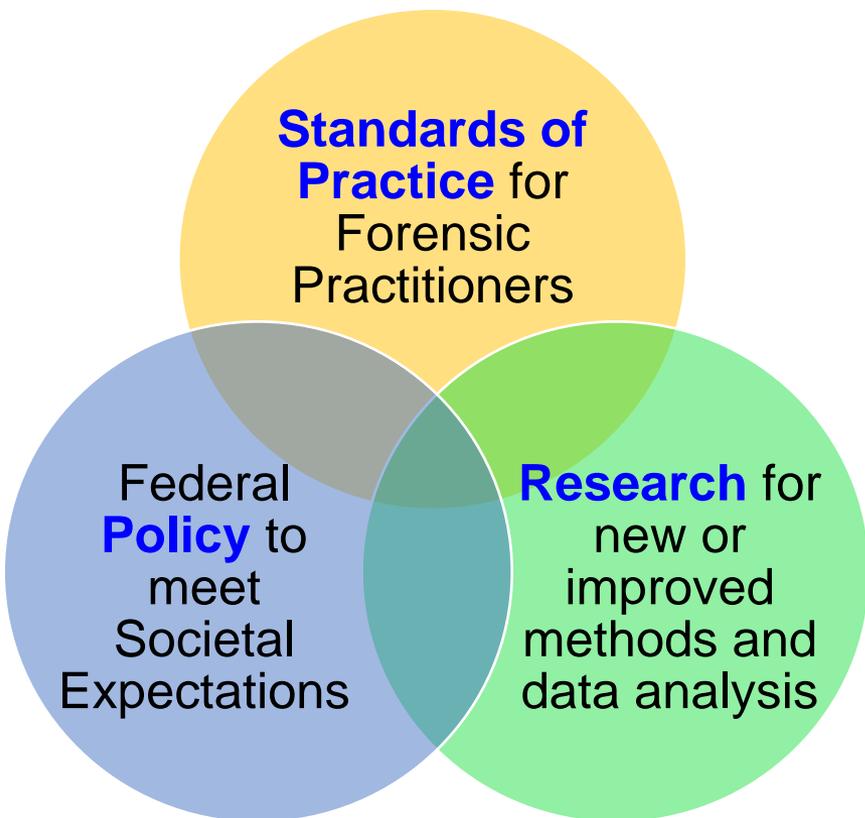


2013 to present

MOU between DOJ and NIST

Establishes a federal advisory committee for DOJ (NCFS) while NIST develops and administers the OSAC

Policy – Practice – Research are all inter-related



National Commission on Forensic Science

A Federal Advisory Committee
for the U.S. Department of Justice



U.S. Department of Commerce

<http://www.justice.gov/ncfs>

February 3-4, 2014 was the first meeting of the **National Commission on Forensic Science**

40 Commissioners

32 voting and 8 ex-officio members

Selected from >300 applicants

Represent diverse backgrounds, extensive experience, and come **from 21 states**



- Professors of biochemistry, chemistry, pathology, physics, sociology, statistics, and law (including a National Medal of Science recipient)
- Crime laboratory directors
- Judges, prosecutors, and defense attorneys
- Sheriff, detective, coroner, medical examiner, victims' advocate, and defendants' rights advocate

NCFS Co-Chairs and OSTP Director address the first Commission meeting

NIST Director
Pat Gallagher

Deputy Attorney General
James Cole

OSTP Director
John Holdren



National Commission on Forensic Science (NCFS)

www.justice.gov/ncfs

Policy-focused

NCFS Leadership

National Commission on Forensic Science Home

- Members
- Meetings
- Subcommittees
- Press Room
- Contact the Commission



In 2013, the Department of Justice (DOJ) established the National Commission on Forensic Science, in partnership with the National Institute of Standards and Technology (NIST), to enhance the practice and improve the reliability of forensic science. This unique partnership draws upon each agency's core strengths to promote scientific validity, reduce fragmentation, and improve federal coordination of forensic science.

The Commission is co-chaired by Deputy Attorney General James M. Cole and NIST Acting Director and Acting Under Secretary of Commerce for Standards and Technology, Willie May. Nelson Santos, Deputy Assistant Administrator for the Office of Forensic Sciences at the Drug Enforcement Administration, and John M. Butler, Special Assistant to the NIST Director for forensic science, serve as vice-chairs. Brette Steele, Senior Advisor on Forensic Science and Senior Counsel to the Deputy Attorney General serves as the Designated Federal Officer and Robin Jones, Consultant within the Department of Justice, serves as Program Manager.

The Commission includes federal, state and local forensic science service providers; research scientists and academics; law enforcement officials; prosecutors, defense attorneys and judges; and other stakeholders from across the country.

GENERAL INFORMATION NATIONAL COMMISSION ON FORENSIC SCIENCE

CONTACT

Brette Steele
Brette.L.Steele@usdoj.gov

By Phone:
(202) 305-0180



Sally Q. Yates
Deputy Attorney General
DOJ Co-Chair



Willie E. May
Director of NIST
NIST Co-Chair



Nelson A. Santos
Vice-Chair (DOJ)



John M. Butler
Vice-Chair (NIST)

32 voting and 8 *ex-officio* members

Last meeting (11th): September 12-13, 2016

Next meeting (12th): January 9-10, 2017

Commission Activities

(operates on 2-year renewal terms)

- Announcement at AAFS 2013 meeting on February 21, 2013
- Commission charter originally filed on April 23, 2013; renewed on April 23, 2015
- Commission membership announced on January 10, 2014
- Meetings held thus far:

- **Meeting 1** February 3 – 4, 2014
- **Meeting 2** May 12 – 13, 2014
- **Meeting 3** August 26 – 27, 2014
- **Meeting 4** October 28 – 29, 2014
- **Meeting 5** January 29 – 30, 2015

Term 1

- **Meeting 6** April 30 – May 1, 2015
- **Meeting 7** August 10 – 11, 2015
- **Meeting 8** December 7 – 8, 2015
- **Meeting 9** March 21 – 22, 2016
- **Meeting 10** June 20 – 21, 2016
- **Meeting 11** September 12 – 13, 2016

Term 2

- Future meetings planned:
 - **Meeting 12** January 9 – 10, 2017
 - **Meeting 13** April 10 – 11, 2017

**Future Terms are
contingent on DOJ
renewal; NCFS Term 2
expires April 23, 2017**

NCFS Meeting Materials Available

<http://www.justice.gov/ncfs/meeting-materials.html>

Meeting Summaries

pdf document

National Commission on Forensic Science

Meeting Summary

May 12-13, 2014

Office of Justice Programs
810 7th Street NW, Washington, DC

2nd National Commission on Forensic Science Webcast

National Commission on Forensic Science Meeting...



Webcast
(>9 hours of
archived video)

MEETING TWO

References

Listing of 22 references provided to Commissioners

Human Factors and Cognitive Bias in Forensic Science

Deborah Boehm-Davis, Dean, College of Humanities and Social Sciences and University Professor, Department of Psychology, George Mason University

John Collins, President, Forensic Foundations Group

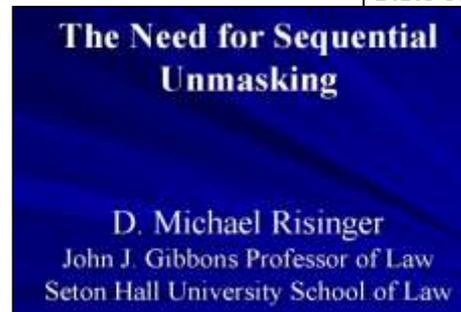
The Need for Sequential Unmasking

Michael Risinger, John J. Gibbons Professor of Law, Seton Hall University School of Law

David H. Kaye

Distinguished Professor of Law and Weiss Family Faculty Scholar, Penn State University, Dickinson School of Law

Speaker Slides (pdf files)



Commission Work Products

- The Commission is a Department of Justice Federal Advisory Committee and therefore **only has direct authority to make recommendations to the Attorney General.**

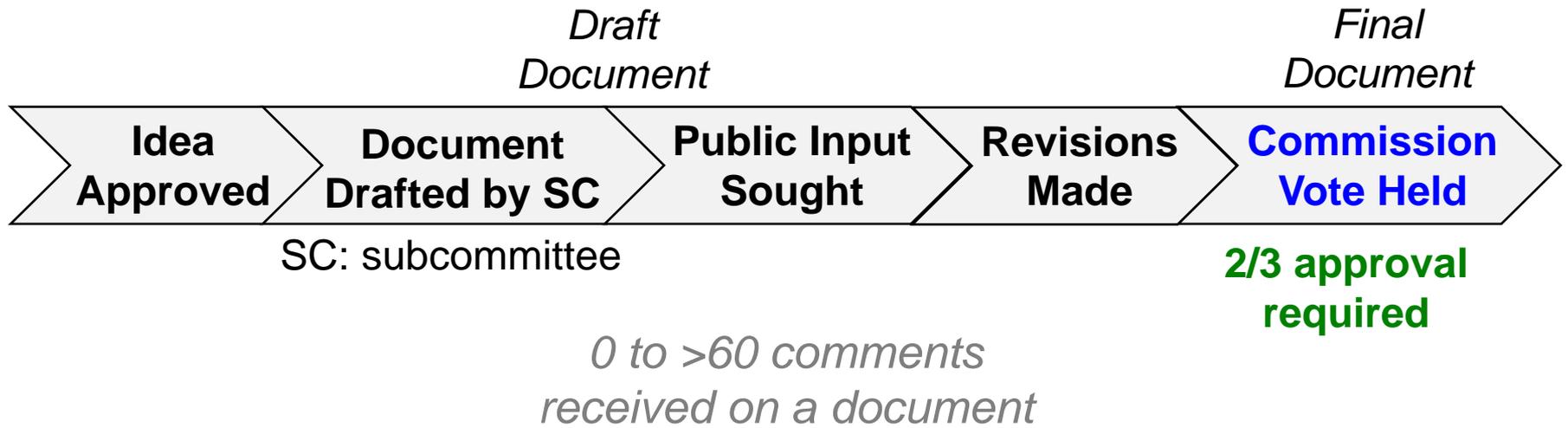
DOJ has promised to respond to NCFS work products within two meetings

- It is hoped that Commission work products will be considered and adopted by other Federal agencies and within state and local jurisdictions.

Voting is conducted electronically with a **two-thirds majority required to pass**



General Process for NCFS Document Development



39 total documents approved
through meeting #11 (Sept 2016)

Types of NCFS Work Products

39 total documents approved

through meeting #11 (Sept 2016)

1) **Views** of the Commission

- **21 approved** (through Meeting #11, Sept 2016)

2) **Recommendations** to the Attorney General

- **18 approved** (through Meeting #11, Sept 2016)
 - Attorney General/DOJ decision to be made and issued within two NCFS meetings
 - **9 DOJ decisions issued so far** (others pending)

EVIDENCE TECHNOLOGY MAGAZINE

The magazine dedicated exclusively to the technology of evidence collection, processing, and preservation
Volume 14, Number 2 • Summer 2016



Forensic Science News
from the
National Institute of
Standards and Technology

Recent Activities of the National Commission on Forensic Science

Written by John M. Butler

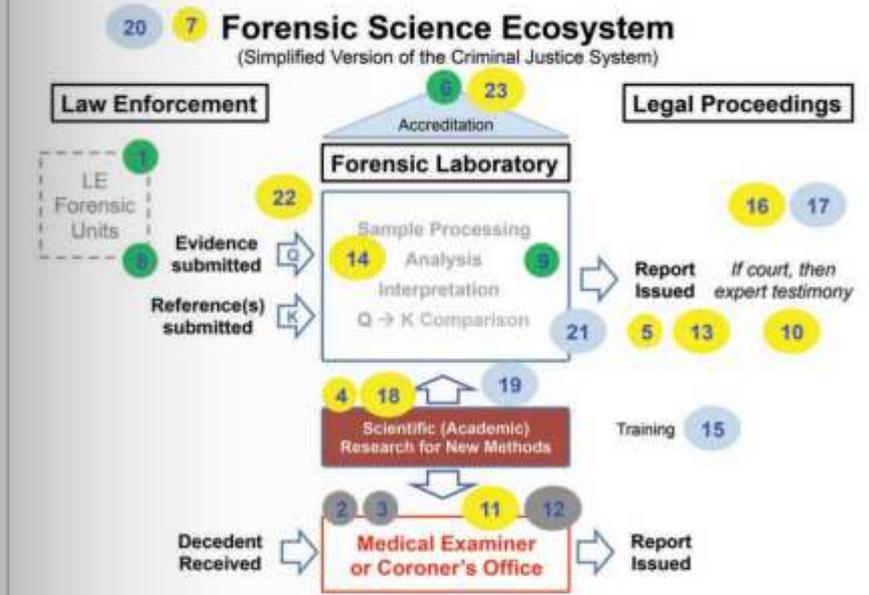
IN FEBRUARY 2013, the U.S. Department of Justice (DOJ) and the National Institute of Standards and Technology (NIST) announced a partnership that included formation of the National Commission on Forensic Science (NCFS) and what is now the Organization of Scientific Area Committees (OSAC). As a Federal Advisory Committee for DOJ, NCFS involves public meetings, public input on draft documents, and an open website sharing meeting materials and final documents. Video recordings of past meetings are available as well. Co-chaired by Deputy Attorney General Sally Yates and NIST Director Willie May, the Commission meets four times a year and involves energetic discussions on a variety of issues.

The accompanying figure is an attempt to show where the 23 NCFS documents thus far approved impact what can be termed the "forensic science ecosystem", which involves law enforcement, forensic laboratories, scientific (academic) research, medical examiner or coroner's offices, and the legal system. For example, NCFS work product #20 is a recommendation regarding a National Code of Professional Responsibility for Forensic Science and Forensic Medicine Service Providers, which received approval at the March 2016 meeting. The number 20 is shaded in light blue because this recommendation is currently under consideration by DOJ.

At the June 20-21, 2016 NCFS meeting, final drafts for seven work products may be introduced for a vote and approval by the Commission. These documents include recommendations regarding pretrial discovery, a request for NIST to perform developmental validation studies, accreditation of digital and multimedia forensic science service providers, and formation of a national disaster call center. Views documents under consideration cover judicial vouching of experts, notice and demand provisions, and validation of forensic science methodology.

The Commission's vision is for all forensic evidence to support the equal and impartial application of justice. The NCFS efforts can be framed into three primary goals: (1) foundational—

NIST CORNER



First 23 NCFS Adopted Work Products

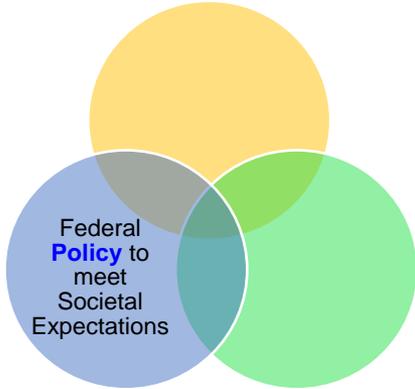
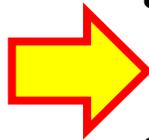
Note: The recommendations in green below and in green on the figure have been responded to by DOJ. Other recommendations are being considered (blue) or are outside the purview of DOJ (gray). Views of the Commission are in yellow. Q = questioned sample; K = known sample

Some Key NCFS Recommendations

Complete set of **39 work products** available at
<https://www.justice.gov/ncfs/work-products-adopted-commission>

Work Products are Developed in **Subcommittees:**

- **Accreditation and Proficiency Testing**
 - Universal Accreditation
- **Interim Solutions**
 - Transparency of Quality Management System Documents
 - National Code of Professional Responsibility
- **Scientific Inquiry and Research**
 - Technical Merit Evaluation of FS Methods & Practice (Views)
- **Medicolegal Death Investigation**
 - National Disaster Call Center
- **Reporting and Testimony**
 - Use of the Term “Reasonable Scientific Certainty”
- **Training on Science and Law**
 - Forensic Science Curriculum Development



Recommendations to the Attorney General Regarding **Use of the Term “Reasonable Scientific Certainty”** (NCFS Approved 3/22/16)

- **Recommendation #1:** The Attorney General should direct all attorneys appearing on behalf of the Department of Justice (a) to forego use of these phrases when presenting forensic discipline testimony unless directly required by judicial authority as a condition of admissibility for the witness’ opinion or conclusion, and (b) to assert the legal position that such terminology is not required and is indeed misleading.
- **Recommendation #2:** **The Attorney General should direct all forensic science service providers and forensic science medical providers employed by Department of Justice [FBI, DEA, and ATF Laboratories] not to use such language in reports or couch their testimony in such terms unless directed to do so by judicial authority.**
- **Recommendation #3:** The Attorney General should, in collaboration with NIST, urge the OSACs to develop appropriate language that may be used by experts when reporting or testifying about results or findings based on observations of evidence and data derived from evidence.

Attorney General Decision on NCFS Recommendation

- Department forensic laboratories [FBI, DEA, ATF] will review their policies and procedures to **ensure that forensic examiners are not using the expressions “reasonable scientific certainty” or “reasonable [forensic discipline] certainty” in their reports or testimony.** **Department prosecutors will abstain from use of these expressions** when presenting forensic reports or questioning forensic experts in court unless required by a judge or applicable law.

Attorney General Memo – September 6, 2016



Office of the Attorney General

Washington, D. C. 20530

September 6, 2016

MEMORANDUM FOR HEADS OF DEPARTMENT COMPONENTS

FROM:

THE ATTORNEY GENERAL

A handwritten signature in blue ink, reading "Loretta E. Lynch".

SUBJECT:

Recommendations of the National Commission on Forensic Science;
Announcement for NCFS Meeting Eleven

As part of the Department's ongoing coordination with the National Commission on Forensic Science (NCFS), I am responding today to several NCFS recommendations to advance and strengthen forensic science. These recommendations involve promoting professional responsibility among forensic practitioners, instituting best practices in quality management of forensic laboratories, and advancing the relationship between academic forensic research and practical implementation.

Organization of Scientific Area Committees (OSAC)

Forensic discipline-specific “guidance groups”
administered by NIST



NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

<http://www.nist.gov/forensics/osac/index.cfm>



>600 people involved in 34 operational units

<http://www.nist.gov/forensics/osac/index.cfm>

- Provides technical leadership to help develop and promulgate **consensus-based documentary standards and guidelines** for forensic science
- Promotes standards and guidelines that are **fit-for-purpose** and **based on sound scientific principles**
- Promotes the use of OSAC documents by accreditation and certification bodies
- Establishes and maintains working relationships with similar organizations

OSAC Interfaces with NIFS-Australia

Mark Stolorow
(Director of OSAC Affairs)

John Paul Jones
(Associate Director of OSAC Affairs)

Linzi Wilson-Wilde
(NIFS-Australia)

Karen Reczek
(OSAC Quality Infrastructure Committee Chair)

On April 22, 2015, Dr. Linzi Wilson-Wilde from the National Institute of Forensic Science in Melbourne, Australia visited NIST to meet with members of the OSAC planning team to discuss standards development in forensic science.

Organization of Scientific Area Committees (OSAC)

144 active projects

Forensic Science Standards Board (FSSB)

Legal Resource Committee (LRC)

Quality Infrastructure Committee (QIC)

Human Factors Committee (HFC)

Biology/DNA SAC

Chemistry/Instrumental Analysis SAC

Crime Scene/Death Investigation SAC

Digital/Multimedia SAC

Physics/Pattern Interpretation SAC

Biological Data Interpretation and Reporting Sub

Biological Methods Sub

Wildlife Forensics Sub

Fire Debris and Explosives Sub

Geological Materials Sub

Gunshot Residue Sub

Materials (Trace) Sub

Seized Drugs Sub

Toxicology Sub

Anthropology Sub

Disaster Victim Identification Sub

Dogs and Sensors Sub

Fire and Explosion Investigation Sub

Medicolegal Death Investigation Sub

Odontology Sub

Crime Scene Sub

Digital Evidence Sub

Facial Identification Sub

Speaker Recognition Sub

Video/Imaging Technology and Analysis Sub

Bloodstain Pattern Analysis Sub

Firearms and Toolmarks Sub

Footwear and Tire Sub

Forensic Document Examination Sub

Friction Ridge Sub

Currently >550 total members

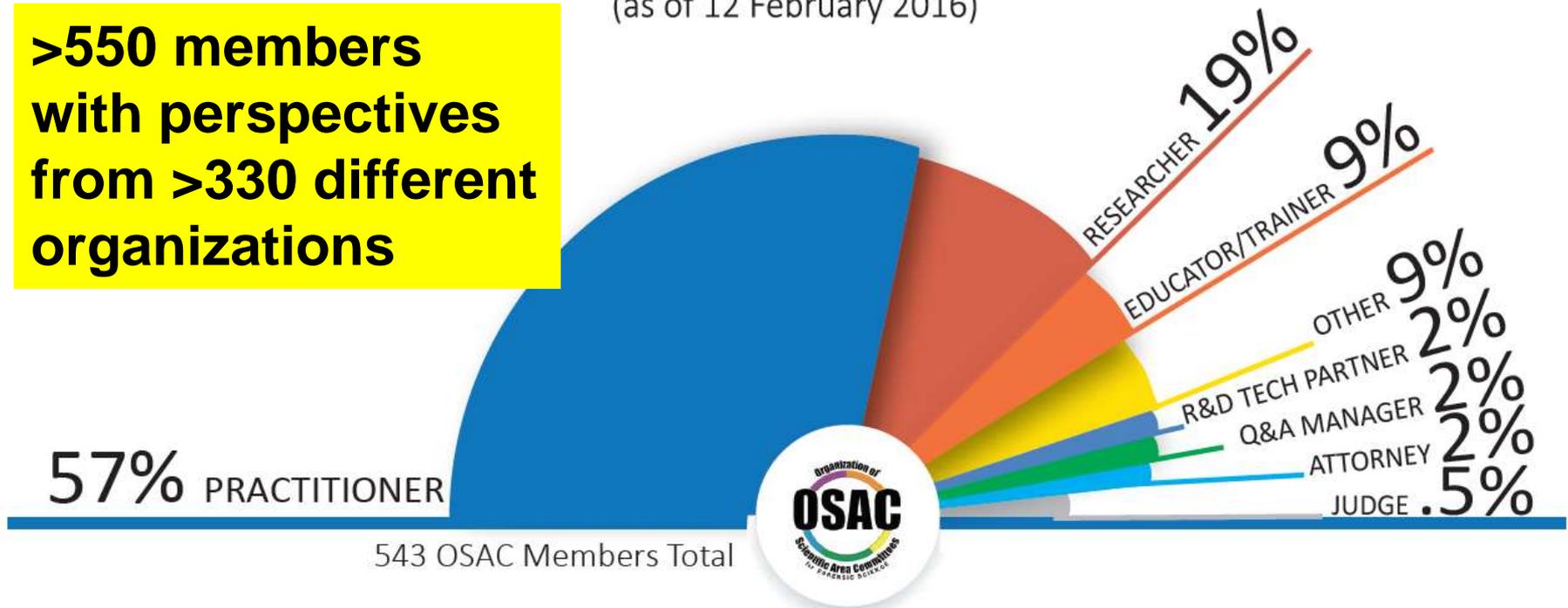
SAC = Scientific Area Committee
Sub = Subcommittee

OSAC Membership

OSAC Members Job Classification

(as of 12 February 2016)

**>550 members
with perspectives
from >330 different
organizations**



2015 to 2016 Change: Judge down .5% QA Manager up 1%

Figure 4. OSAC Members Employer and Job Classification. The OSAC infrastructure was created to have balance and input from various perspectives.

Across the 34 OSAC Units, Hundreds of Virtual Meetings and a Few In-Person Meetings Are Held Annually



From OSAC Annual Report (2016)

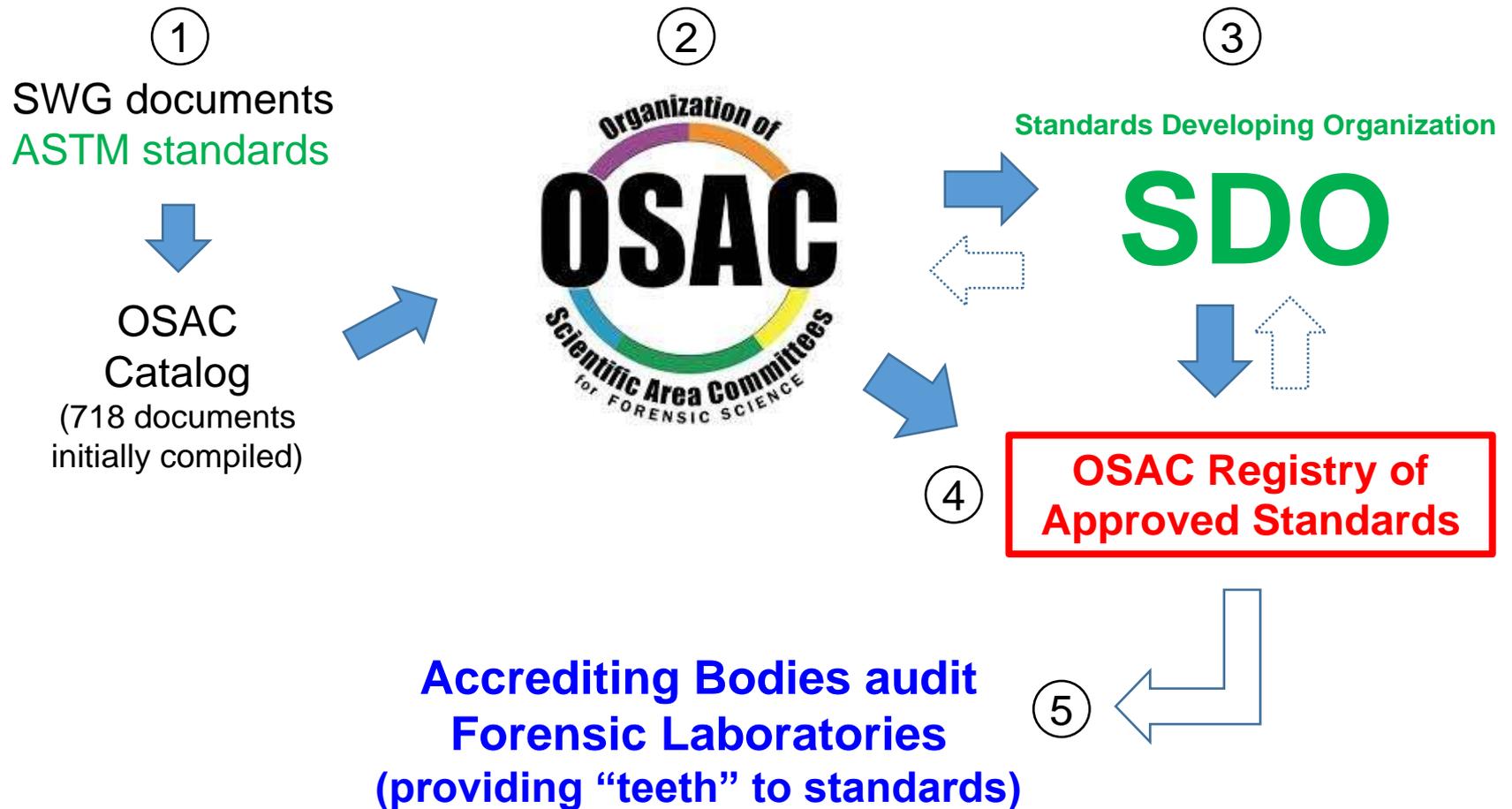
OVERALL GOAL of OSAC REGISTRY:

Provide trusted discipline-specific standards (and guidelines)
that accrediting bodies can use to audit accredited laboratories

**Provides initial
starting material**

**Creates high-quality
guidance materials**

**Turns OSAC materials
into standards**



Standards Developing Organizations (SDOs) that Provided Informational Webinars to OSAC Members in January 2016



Figure 23. NIST OSAC SDO Informational Webinars. Multiple SDOs attended Webinars to meet with OSAC members.

OSAC Biology/DNA Documents Close to Completion (then will go through an SDO process)

Biological Methods Subcommittee

1. Best Practices Recommendations for Assessing Educational Requirements for Forensic DNA Analysts
2. Standards for Internal Validation of DNA Analysis Methods
3. Standards for the Analytical Procedures and Report Writing of Serological Methods
4. Standards for Training in Serological Methods
5. Best Practices for Training of DNA Isolation and Purification Methods

Biological Data & Reporting Subcommittee

1. Validation Standards for Probabilistic Genotyping Systems
2. Mixture Interpretation Verification
3. Software Validation Guidelines

Wildlife Forensics Subcommittee

1. General Standards
2. Report Writing Guidelines

OSAC Monthly Newsletter

A communication vehicle to improve interaction with stakeholders



One of the ways to solicit public comment on standards and guidelines up for consideration on the OSAC Registries

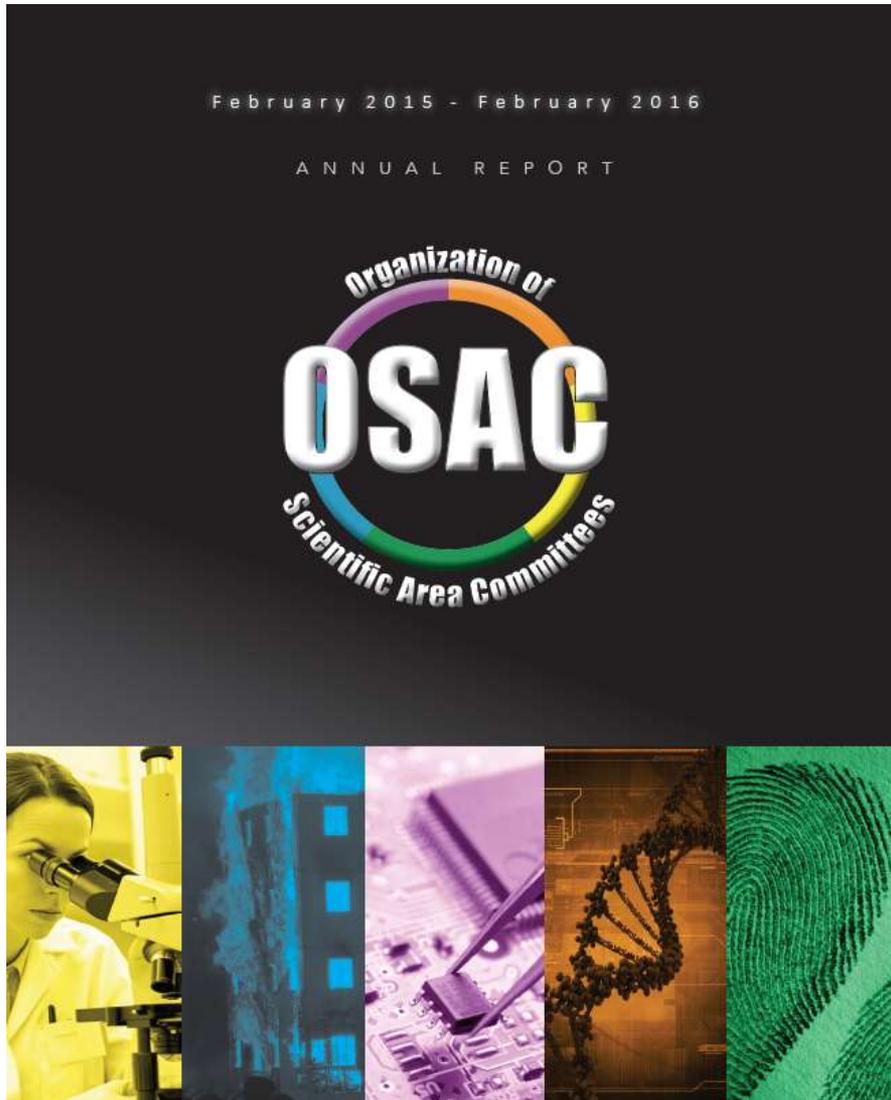
Issues (to-date)

- August 2015
- September 2015
- October 2015
- November 2015
- December 2015
- January 2016
- February 2016
- March 2016
- April 2016
- May 2016
- June 2016
- July 2016
- August 2016
- September 2016

Newsletters released around 15th of each month

<http://nist.gov/forensics/osac/osac-newsletter.cfm>

OSAC Annual Report



- **74 page report** summarizing activities from the first year of OSAC (Feb 2015 to Feb 2016)
- Available as a pdf file for download at https://www.nist.gov/sites/default/files/documents/2016/09/13/osac_annual_report_2015-2016.pdf

Released 19 September 2016

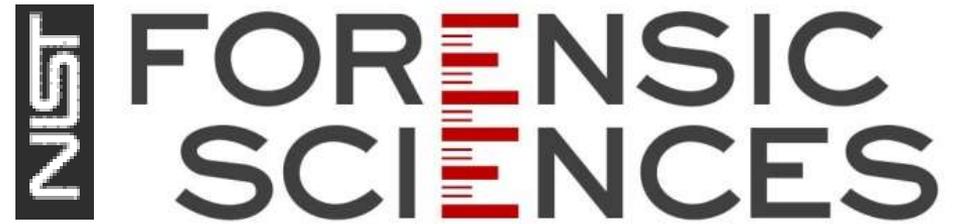
The Goal of Producing Documentary Standards in Forensic Science is Not New

Ideals for firearm identification

There should be adopted:

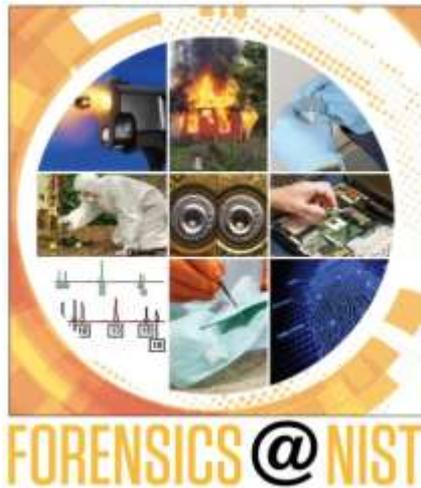
1. **Minimum standards of equipment** to be used.
2. **Standards for records of evidence** to accompany and substantiate the expert's opinion; these to include photographs, metrological data and interpretations in permanent form.
3. **Standards for qualification of experts** which will include actual tests made against secretly designated materials and reported in compliance with item 2.
4. Methods for... **following up [with] experts testifying in court** to guarantee the highest efficiency.

Wilmer Souder, *Army and Navy Journal*, March 19, 1932



NIST research programs in forensic science are supported by Congressional appropriations and other agency funding (including FBI, DHS, and DoD)

A Biannual Conference to Showcase NIST Research



November 8-9, 2016
Gaithersburg, MD

SIX CURRENT FUNDED FOCUS AREAS

- 1. Ballistics and Associated Tool Marks***
- 2. Digital and Identification Forensics***
- 3. Forensic Genetics (DNA)***
- 4. Toxins***
- 5. Trace***
- 6. Statistics***

A Forensic Science Center of Excellence was announced in May 2015 to supplement internal NIST research

<http://www.nist.gov/forensics/forensics-at-nist-2016.cfm>

Forensic Conference Organized by NIST

FORENSIC SCIENCE
ERROR MANAGEMENT

INTERNATIONAL
FORENSICS SYMPOSIUM

JULY 20-24, 2015 • WASHINGTON, DC



Planning has started for a second Symposium

Date: July 24-28, 2017

Location: Gaithersburg, MD

Sponsors that have been approached

DoD, FBI, NIST

http://www.nist.gov/director/international_forensics_home.cfm

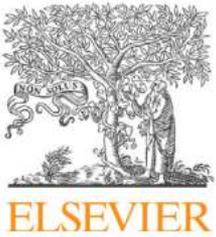
Summary

- **NCFS – *focused on policy issues***

- 40 Commissioners + ~60 additional subcommittee members
- 11 public meetings held so far
- 39 documents approved including new Code of Professional Responsibility (adopted by DOJ in Sept 2016)

- **OSAC – *working on best practices***

- 600 members + ~250 affiliates
- 2 public status meetings, 4+ in-person and 100s of virtual meetings
- >3,000 documents created or in process
- First annual report (released in Sept 2016)



September 2015 issue

Forensic Science International: Genetics

journal homepage: www.elsevier.com/locate/fsig



U.S. initiatives to strengthen forensic science & international standards in forensic DNA

John M. Butler*

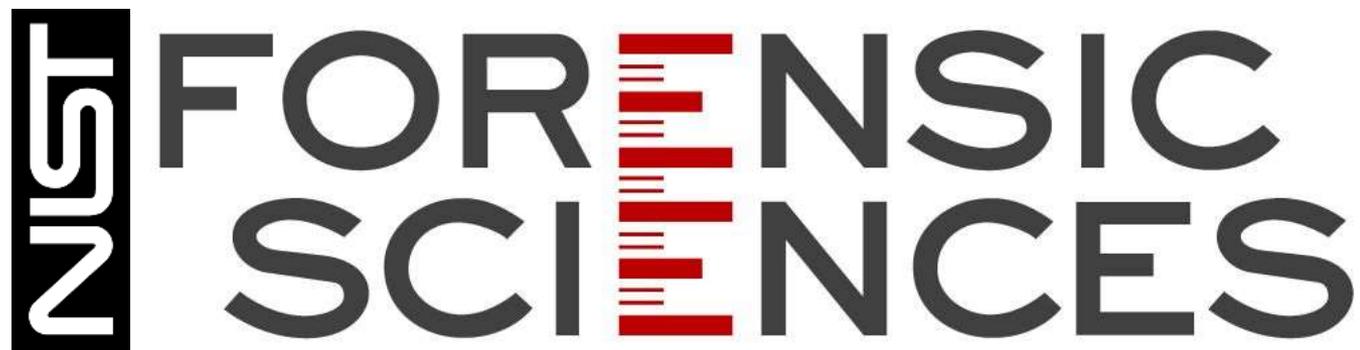
National Institute of Standards and Technology, Gaithersburg, MD, USA

OPEN SOURCE
(freely available)

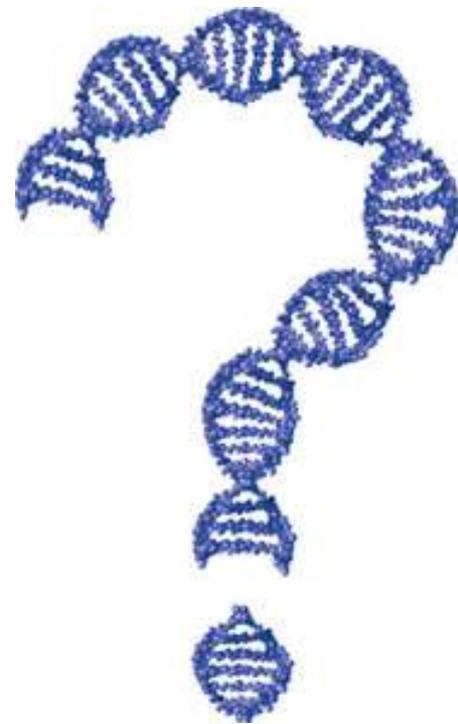
- This review article covers recent U.S. activities to strengthen forensic science including the formation of the National Commission on Forensic Science and the Organization of Scientific Area Committees
- DNA documentary standards and guidelines from organizations around the world are also included

National Commission on Forensic Science (NCFS):
www.justice.gov/ncfs

Organization of Scientific Area Committees (OSAC):
www.nist.gov/forensics/osac/index.cfm



www.nist.gov/forensics



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